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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,081	08/19/2003	Hirokazu Uejima	Q76996	3059
23373	7590	08/17/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			CHUO, TONY SHENG HSIANG	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/643,081

Applicant(s)

UEJIMA ET AL.

Examiner

Tony Chuo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Claims 1-12 are currently pending. The 112 rejection of claim 2 is withdrawn. The currently amended claims 1-12 do not overcome the previously stated 102 and 103 rejections. Therefore, claims 1-12 stand rejected under the following 112, 102, and 103 rejections. This action is made FINAL as necessitated by the amendment.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 7, and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what groove structures are representative of groove-like.

***Claim Rejections - 35 USC § 102/103***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102/103 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to

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a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fronk et al (EP 1107340). The Fronk reference teaches a separator comprising a metal substrate "98" such as titanium or stainless steel with either a conductive polymer coating "94" applied directly to the substrate or a conductive polymer coating applied to a passive layer "96" comprising an oxide layer of titanium or stainless steel on the surface of the substrate (See Figure 4 and 5). In addition, the conductive polymer coatings are not subjected to baking such as the process of laminating (See paragraph [0019]). Examiner's note: Claims 1-4 are construed as product-by-process claims. "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Therefore, the claims are anticipated by Fronk et al. However, if the claims are not anticipated, the claims are obvious as it has been held similar products claimed in product-by-process limitations are obvious (*In re Brown* 173 USPQ 685 and *In re Fessman* 180 USPQ 324 (Refer to MPEP 2113: Product-by-process claims)).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5, 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suenaga et al (US 2002/0102453) in view of Mitsui et al (EP 1100097). The Suenaga reference teaches a method of forming a separator for a fuel cell comprising: forming groove-like gas flow passages by bending a substrate made of a metal material (See Figure 2 and paragraph [0085]). However, the reference does not express teach forming a conductive polymer film on a surface of the bent substrate by electrolytic polymerization wherein the substrate is used as an electrolytic polymerization electrode. The Mitsui reference teaches forming a conductive polymer layer by electrolytic polymerization on the surface of a substrate wherein the substrate is used as an electrolytic polymerization electrode (See paragraph [0015]). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Suenaga method of forming a fuel cell separator to include a step of forming a conductive polymer film on a surface of the bent substrate by electrolytic polymerization wherein the substrate is used as an electrolytic polymerization electrode in order to form a protective layer that has sufficient durability and thickness to increase the corrosion resistance of the separator. The Mitsui reference is relevant to the Suenaga reference

because both references teach electrochemical devices so therefore they are in the same field of endeavor.

8. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao et al (US 2002/0009630) in view of Mitsui et al (EP 1100097). The Gao reference teaches a method of forming a fuel cell separator by subjecting a metal plate substrate to electrolysis by using an electrolytic solution of an aqueous solution comprising oxalic acid, sulfuric acid, or chromic acid to form a passive state layer (See paragraph [0035]). However, the reference does not expressly teach forming a conductive polymer film by electrolytic polymerization on the passive state layer wherein the substrate is used as an electrolytic polymerization electrode. The Mitsui reference teaches forming a conductive polymer layer by electrolytic polymerization on the surface of a substrate wherein the substrate is used as an electrolytic polymerization electrode (See paragraph [0015]). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Gao method of forming a fuel cell separator to include a step of forming a conductive polymer film by electrolytic polymerization on the passive state layer wherein the substrate is used as an electrolytic polymerization electrode in order to form a protective layer that has sufficient durability and thickness to increase the corrosion resistance of the separator. The Mitsui reference is relevant to the Gao reference because both references teach electrochemical devices so therefore they are in the same field of endeavor.

9. Claims 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suenaga et al (US 2002/0102453) in view of Gao et al (US 2002/0009630), and further

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in view of Mitsui et al (EP 1100097). The Suenaga reference teaches a method of forming a separator for a fuel cell comprising: forming groove-like gas flow passages by bending a substrate made of a metal material (See Figure 2 and paragraph [0085]).

However, the reference does not expressly teach a step of forming a passive layer by immersing the substrate in a solution selected from the group consisting of solutions of nitric acid, chromic acid, bichromate of soda and potassium permanganate or by subjecting the substrate to electrolysis in an acid liquid, or by subjecting the substrate to anode polarization on a surface of the bent substrate. The Gao reference teaches a method of forming a fuel cell separator by subjecting a metal plate substrate to electrolysis by using an electrolytic solution of an aqueous solution comprising oxalic acid, sulfuric acid, or chromic acid to form a passive state layer (See paragraph [0035]).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the Suenaga method of forming a fuel cell separator to include a step of forming a passive layer by immersing the substrate in a solution selected from the group consisting of solutions of nitric acid, chromic acid, bichromate of soda and potassium permanganate or by subjecting the substrate to electrolysis in an acid liquid, or by subjecting the substrate to anode polarization on a surface of the bent substrate in order to increase the corrosion resistance of the separator. However, the references do not expressly teach a step of forming a conductive polymer film on the passive-state layer by electrolytic polymerization wherein the substrate is used as an electrolytic polymerization electrode. The Mitsui reference teaches forming a conductive polymer layer by electrolytic polymerization on the surface of a substrate wherein the substrate

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is used as an electrolytic polymerization electrode (See paragraph [0015]). Therefore, it would have been obvious to one of ordinary skill in the art to modify the Suenaga/Gao method of forming a fuel cell separator to include a step of forming a conductive polymer film by electrolytic polymerization on the passive state layer wherein the substrate is used as an electrolytic polymerization electrode in order to form a protective layer that has sufficient durability and thickness to further increase the corrosion resistance of the separator. The Mitsui reference is relevant to the Gao and Suenaga references because all three references teach electrochemical devices so therefore they are in the same field of endeavor.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not



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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC



RAYMOND A. JANDRO  
PRIMARY EXAMINER